



Features

- Special alloy resistor
- Power rating at 70 °C: 3 W
- Low thermal EMF <40 $\mu\text{V}/^\circ\text{C}$
- Inductance less than 5 nH
- RoHS compliant*
- AEC-Q200 compliant

Applications

- Power supplies
- Stepper motor drives
- Input amplifiers

CRA2512 - High Power Current Sense Chip Resistor

Electrical Characteristics

| Characteristic | CRA2512 |
|-----------------------------|------------------------|
| Power Rating @ 70 °C | 3 W |
| Operating Temperature Range | -55 °C to +170 °C |
| Derated to Zero Load at | +170 °C |
| Maximum Working Current | $(P / R)^{1/2}$ |
| Insulation Resistance | > 100 megohms |
| Resistance Range | 0.010 - 0.100 Ω |
| Resistance Tolerance | $\pm 1\%$, $\pm 5\%$ |
| Temperature Coefficient | ± 50 PPM/°C |

Performance Characteristics

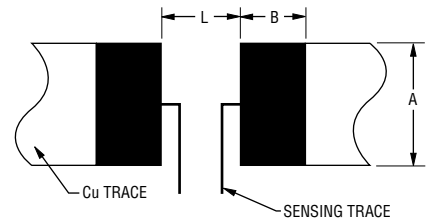
| Test | Conditions | Specification |
|---------------------------|---|------------------------|
| Thermal Shock | -55 °C to + 150 °C, 1000 Cycles, 15 minutes | $\Delta R < \pm 0.5\%$ |
| Short Time Overload | 5 X Rated Power for 5 seconds | $\Delta R < \pm 0.5\%$ |
| Low Temperature Storage | -55 °C for 24 hours | $\Delta R < \pm 0.5\%$ |
| High Temperature Exposure | 1000 hours @ + 170 °C | $\Delta R < \pm 1.0\%$ |
| Bias Humidity | + 85 °C, 85 % RH, 10 % Bias, 1000 hours | $\Delta R < \pm 0.5\%$ |
| Mechanical Shock | 100 g's for 6 milliseconds, 5 pulses | $\Delta R < \pm 0.5\%$ |
| Vibration | Frequency varied 10 to 2000 KHz in one minute, 3 directions, 12 hours | $\Delta R < \pm 0.5\%$ |
| Load Life | 1000 hours at rated power at +70 °C, 1.5 hours on, 0.5 hours off | $\Delta R < \pm 1.0\%$ |
| Resistance to Solder Heat | +260 °C Solder, 10-12 second dwell, 25 mm/second emergence | $\Delta R < \pm 0.5\%$ |
| Moisture Resistance | MIL-STD-202 Method 106, 0 % power (7a and 7b not required) | $\Delta R < \pm 0.5\%$ |

Additional Information

Click these links for more information:



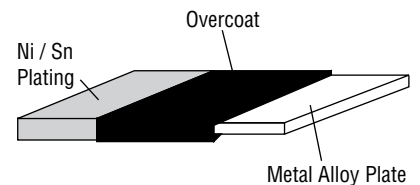
Recommended Solder Pad Layout



| Model | A | B | L |
|---------|-----------------------|-----------------------|-----------------------|
| CRA2512 | $\frac{4.0}{(0.157)}$ | $\frac{2.1}{(0.083)}$ | $\frac{4.1}{(0.161)}$ |

DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Construction



WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

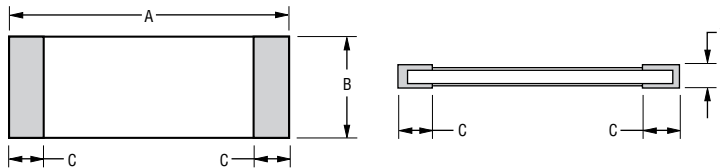
Users should verify actual device performance in their specific applications.

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CRA2512 - High Power Current Sense Chip Resistor

BOURNS®

Product Dimensions



| Model | A | B | C | T |
|---------|---|---|---|---|
| CRA2512 | $\frac{6.40 \pm 0.20}{(0.252 \pm 0.008)}$ | $\frac{3.20 \pm 0.20}{(0.126 \pm 0.008)}$ | $\frac{0.90 \pm 0.10}{(0.035 \pm 0.004)}$ | $\frac{0.7 \pm 0.20}{(0.0276 \pm 0.008)}$ |

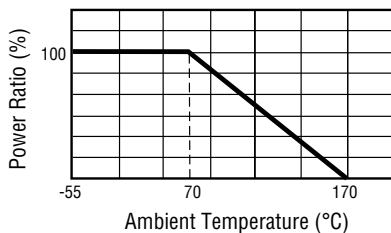
DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

CRA2512 Resistance Values Available

| Code | R Value | Code | R Value |
|------|---------|------|---------|
| R010 | 0.010 | R047 | 0.047 |
| R015 | 0.015 | R050 | 0.050 |
| R020 | 0.020 | R060 | 0.060 |
| R022 | 0.022 | R070 | 0.070 |
| R025 | 0.025 | R075 | 0.075 |
| R030 | 0.030 | R080 | 0.080 |
| R040 | 0.040 | R100 | 0.100 |

Consult factory for other resistance values.

Derating Curve

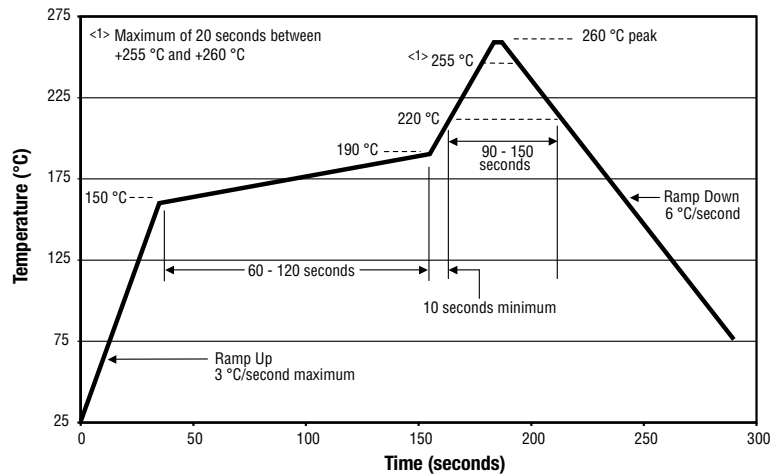


Environmental Specifications

Moisture Sensitivity Level..... 1

Soldering Profile

Can be soldered in accordance with IPC/JEDEC-J-STD-020.



How to Order

CRA 2512 - F Z - R020 E LF

Model _____
 (CRA = Precision Chip Resistor)
 Size _____
 2512 = 2512 Size
 Resistance Tolerance _____
 • F = ±1 %
 • J = ±5 %
 TCR (PPM/°C) _____
 • Z = ±50 PPM/°C
 Resistance Value _____
 "R" (decimal point) followed by three significant digits (example: R025 = 0.025 ohm)
 Packaging _____
 • E = 4000 pieces on 180 mm (7 inch) reel
 Termination _____
 • LF = Tin-plated (RoHS compliant)

Specifications are subject to change without notice.

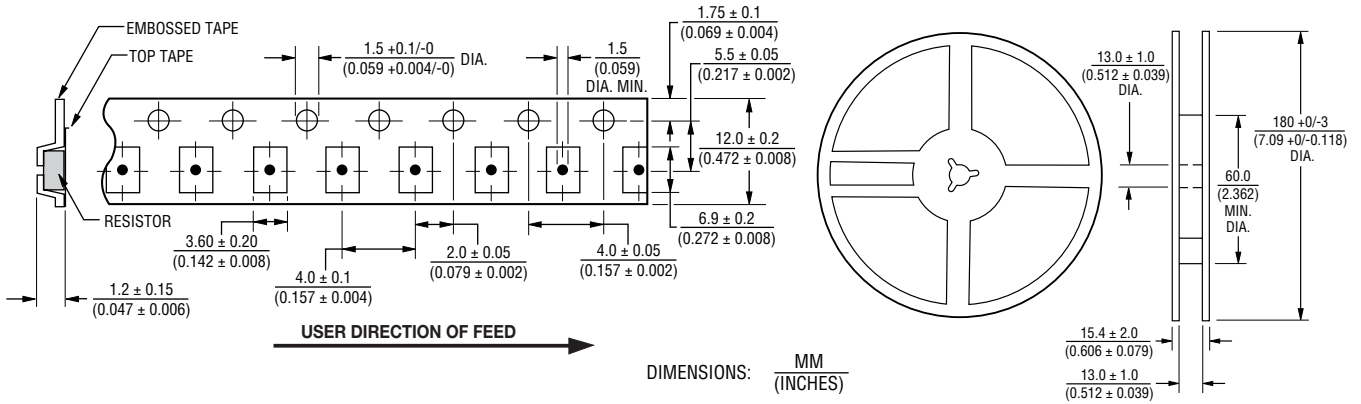
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CRA2512 - High Power Current Sense Chip Resistor

BOURNS®

Packaging Dimensions (Conforms to EIA RS-481A)



REV. 06/21

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